Risk behaviours and physical activity in Ribeira Grande Secondary School

Rosado, A.[1]; Sousa, M.[2]

[1] Faculty of Human Kinetics', Technical University of Lisbon
[2] Ribeira Grande Secondary School, S.Miguel

Introduction

Sedentary lifestyles associated with other risks behaviours has become a phenomenon with epidemic proportions. The produced research throughout the last decades gives evidence of the consequences of this phenomenon. Many children and young people compromise their health through unhealthy behaviours, such as using alcohol, tobacco and other drugs (1), low physical fitness and unhealthy nutrition habits. It is our belief that schools should follow a health education policy based on two scientific facts: 1) The importance of developing a lifelong, positive health-related behaviours, because we believe, such attitudes begin to develop at home with family, and find substance in school (working in partnership with families, and educational community); 2) school programs for health education must be supported by a system to promote children's health literacy, where the children and young people feel the necessity to promote their health. A health-literate person understands scientifically based principles of health promotion and disease prevention, incorporates that knowledge into personal health-related attitudes and behaviours, and makes good health a personal priority [2]. Ribeira Grande Secondary School is situated in one of the three poorest areas of Portugal (Censos 2001). Despite this there are no significant problems with bullying or violence but alcohol related problems are a fact that needs to be addressed.

In some Azorean studies about this topic (Maia et al., [3], [4], [5]), the authors refers to a high tendency of low health related physical fitness. The authors suggest that females are the risk group, where they found the lowest trends of physical fitness, and highest levels of obesity.

The aim of this descriptive study is to identify the patterns and physical activity levels, in students between the ages of 13 and 18 in the RGSS. In addition to this we aim to discover how and when the students adopt risky behaviours such as smoking,

drug use, alcohol consumption and physical inactivity. We consider fundamental that these points are taken into consideration in order to adopt the right strategies to a) prevent young people from beginning these lend of behaviour, b) to help young people become aware the consequences of these behaviours.

Method

The subjects were 561 students, 209 boys and 352 girls. We inquired 640 students, who represent 81% of totality of the school students (790). The student age was between 13 to 18 years old, distributed from 7th to 12$^{th\ school}$ years.

The gathered data was obtained through an anonymous questionnaire about life style. An independent "specialist validation" process was undertaken to assure the validity of the instrument. Several measures of fidelity were also undertaken. Fidelity values (interclass R) varied between 79% e 89% in a test-retest approach (25% of student population, distributed evenly throughout the age groups). We confirmed the normality pre-requisites with the Kolmogorov-Smirnov test and the homogeneity of variances with the Levene test. We applied Manova test with the post-hoc calculations and, for nominal variables, the X^2. All calculations were done with SPSS 12.

Results

The main results for physical activity trends and lifestyle standards show a high level of physical inactivity, and sedentary behavior, such as watching television, playing videogames or computers. This kind of information becomes more worrying when we verify that Physical Education is the only form of exercise in 65,8 % (male 38,6%, female 69,3) of student's lives. This fact brings more responsibility to Physical Education as a tool to promote healthy life styles.

When we looked at nutrition habits we saw that 84% of females and 45,8% of males don't eat vegetables every day, they eat a lot of chips and drink a lot of fizzy drinks. Additionally, in general the students view salt as a healthy food (34,76 male and 39,20 for female). Despite these, more than 30 % don't have breakfast 3 or 4 days per week.

For the evaluation of overweight and obesity trends we use the Body Mass Index (BMI), despite we know the limitation of these methodology.

The BMI trends in both genders are lower than other Azorean studies (Maia et al., [3], [4], [5]). Despite that, we founded 20 students obese with BMI index between 39 and 42.

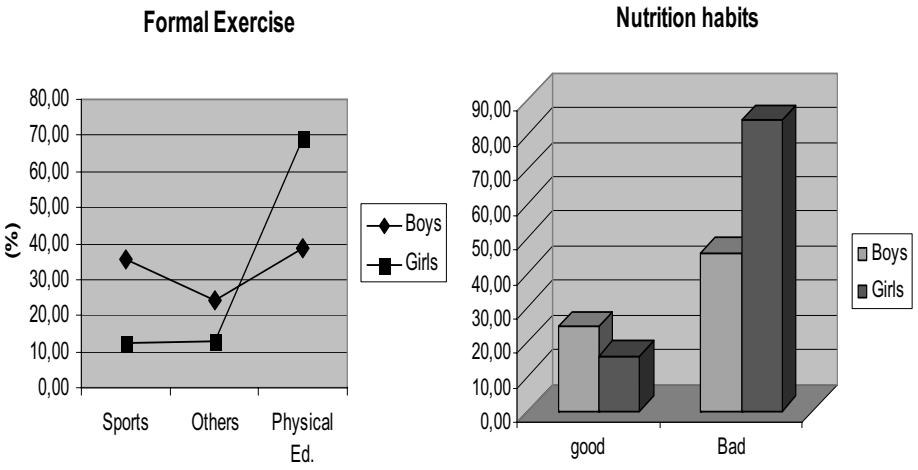

Figure 1. Formal exercise and nutritional habits for boys and girls.

Age	0	1	IC (95%)	2	IC (95%)	χ^2	*p*
13	84,9	13,2	7,7-18,8	4,8	0,7-8,6	234	<0.001
14	79,7	16,7	9,7-23,7	5,5	3,0-7,8	249	<0.001
15	77	17,9	13,7-22,1	5	2,6-7,7	412	<0.001
16	73	21,6	17,2-26,0	5,5	3,0-7,8	424	<0.001
17	83,3	15,3	11,9-18,8	1,4	0,6-3,3	346	<0.001
18	83,4	14,5	8,6-19,7	2,1	0-4,4	512	<0.001

Figure 2. BMI trends Boy : 0= normal weight; 1 = Overweight; 2 = Obesity

Age	0	1	IC (95%)	2	IC (95%)	χ^2	*p*
13	76,5	20,4	17,7-23,7	3,1	1-4,1	412	<0.001
14	79,8	16	12,4-21,2	2,8	1,1-4,2	346	<0.001
15	77,9	19	17,5-23,8	3,1	1,4-4,5	327	<0.001
16	76,3	18,6	14,3-22,5	5,4	3,1-8,5	339	<0.001
17	80,8	16	12,4-20,4	1,8	0,4-3,5	346	<0.001
18	81,2	16,1	17,2-21,3	2,9	0,9-4,1	468	<0.001

Figure 3. BMI trends Girls: 0= normal weight; 1 = Overweight; 2 = Obesity

Physical fitness was evaluated with the Prudential Fitnessgram test battery (curl-up, push-up, trunk lift and one mile-run walk). The cut-off values suggested by Cole et al. [1] were used to define overweight and obesity using mass index.

The main results show, in both genders and for age groups, a very lower success trends. These results it's similarly with other Azorean studies, with only two age groups

Age	Boys (%)	IC (95%)	Girls (%)	IC (95%)
13	40,7	35,3-46,7	30,2	23,2-37,7
14	46,3	40,5-50,5	33,3	31,1-38,3
15	40,5	35,2-46,7	37,6	32,7-42,4
16	45,2	39,6-50,1	50,1	41,7-57,6
17	47,2	41,4-51,3	40,8	35,1-46,5
18	61,2	52-70,4	36,1	31,5-40,3

Figure 4. Physical Fitness results of success in all tests in both genders

(18 years old boys, and sixteen years old girls) having more than 50% success in all tests. The girls present a lower physical fitness level.

Smoking is another bad habit and the tendency is lower than the literature (20%), but if we analyze per age group we see that youths who are more than 15 years old tend to smoke significantly more than younger age groups. We were alerted for the fact that the girls smoke a higher number of cigars per day.

Alcohol consumption presents the most significant risk for the school children, with a very high prevalence. More than 80% of this, boys 17 years old and 50% of the girls with the same age, drink alcohol every weekend socially or at home. They have social alcohol habits because our city has in agriculture and fishing the main principal economic activity. And these kind of work have a strongly connection with alcoholism. We can see these with our adult population.

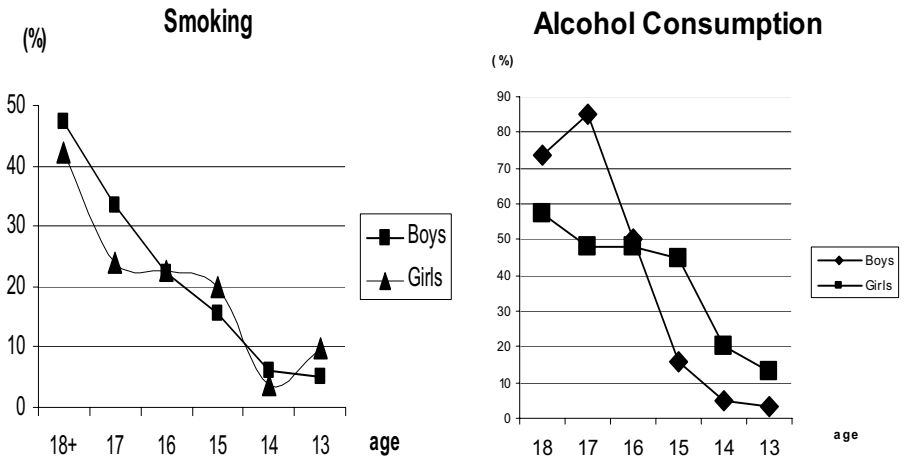

Figure 5. Smoking and alcohol consumption between boys and girls along age.

At the age of 16 we relate a higher increase in drug consumption; we saw also that boys show a higher level of consumption. Globally the trends are low. However, students over 16 hold a significant percentage.

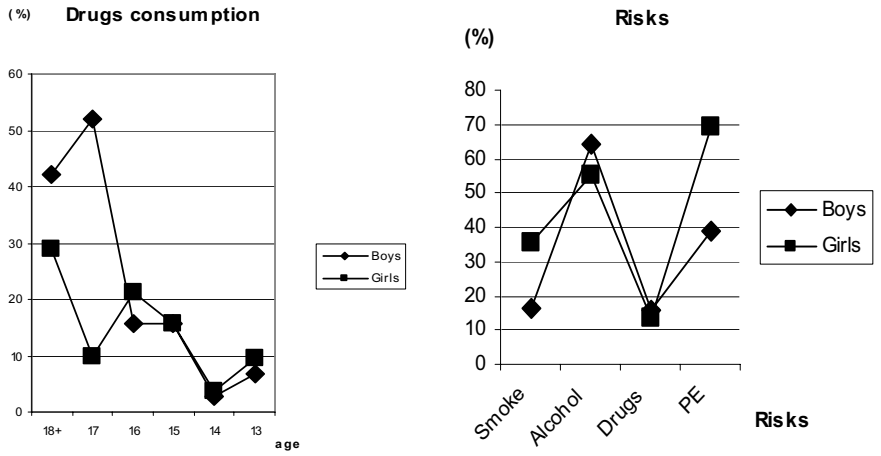

Figure 6. Drugs consumption and global risk profile between boys and girls.

Conclusions

Females present the highest risk group. They smoke more and have a more sedentary lifestyle. For 70% of the girls, Physical Education is the only form of exercise. On average, they spend more than 2 hours a day watching television and spend more time at the computer than boys. We also found that girls have a higher tendency to develop eating disorders or become clinically obese. Otherwise, nutritional habits in both, males and females, are very worrying; the students changed from a Mediterranean diet to a hipercaloric diet.

Alcohol consumption has high trends of prevalence but the difference between genders doesn't have statistic significance.

Drugs consumption is low for the students until they reach 15 years old but at this age there is a significant negative development. We founded a positive correlation between the student who smoke and the other bad habits (alcohol, drug use, and physical inactivity).

In light of this we need to differentiate active lifestyles promoting strategies based on preventing and remedial procedures that consider the specificity of gender and age but, also, the specificity of the different problems: drug use, diet and nutrition, physical activity habits.

References

[1] Cole, T.; Bellizzi, M.; Flegal, K.; Dietz, W. (2000). Establishing a standard definition for child overweight and obesity worldwide – International survey. British Medical Journal. (320) pp: 1240-1243.
[2] Health Framework for California Public Schools – Kindergarten Trough Grade Twelve (2003) Adopted by the California State Board of Education, 2002, Published by the California Department of Education, 2003.
[3] Maia, J.; Lopes, V. (2002) – Estudo do crescimento somático, aptidão física, actividade física e capacidade de coordenação corporal de crianças do 1º Ciclo do Ensino Básico da RAA, DREFD, FCDEF-UP.
[4] Maia, J.; Lopes, V. (2003) – Um Olhar sobre crianças e jovens da RAA – Implicações para a Educação Física, Desporto e Saúde. DREFD, FCDEF-UP.
[5] Maia, J.; Lopes, V. (2004) –Estabilidade e mudança no crescimento e desenvolvimento de crianças e jovens açorianos. Um ano depois. DREFD, FCDEF-UP.